	Bti	S-methoprene
What it is	A naturally occurring Bacteria found in soils named *Bacillus thuringiensis israelensis*	A synthetic Insect growth regulator that mimics the natural juvenile hormone, which must be absent for pupal moult.
How it works	Larvae feed on the Bti. Bti spores produce a toxin in the gut of the mosquito larvae, which destroys the larvae gut lining causing death.	Pellets dissolve into the water releasing S-methoprene, the larvae are exposed through the skin and filtration inducing morphological changes which interfere with normal development. These effects, not immediately apparent, result generally in the failure of adult mosquitoes to emerge from pupae.
How it looks (formulation)	Granules, Liquid and Dunks	Pellets
Where to use it	Open water Natural water containers Water containers	Larval Traps Water Containers (previous delimited areas using GPS data)
How much to use	Granules: 1tbp per 7 m^2 or 1/2tsp per m^2 Dunks: 1 per 2-10m^2 Liquid: 100mL per L	1 pellet per L 2 pellets for a car tyre
Advantages	Non-toxic to humans and non-target organism, fish safe and pets friendly. Dunks can be broken into quarters	Not a direct toxin. Target-specific and doesn't harm mammals, waterfowl or beneficial predatory insects. Does not require the mosquito larvae to feed Not affected by organic content of water Ongoing residual effect with programmed application
Disadvantages	Delivery timing critical (mid-late non feeding 4th Instar larvae and pupae won't be affected) Frequent applications often required if water has high organic loading (Bti readily binds to	Minimal effect on fourth instars not already exposed and no effect on mosquitoes which have reached the pupal or adult stage prior to treatment. Live larvae and pupa remain present.

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	organic matter making it unavailable to larvae) Accurate targeting required	Adults in the vicinity may have flown in from neighboring untreated areas. Reduced effectiveness in deeper waters (species variable).
How long is effective	7 – 14 days granules Up to 30 days dunks 2-3 days liquid Bti All formulations are affected by organic loading	Up to 30 days
Expiry times	Granules 2 years in sealed container (cool, dark and dry conditions) Dunks more than 2 years	Does not expire: Best before 1-2 years from date of manufacture. Stored in cool, dark and dry conditions